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O Pollution, Pollution! Wherefore Art Thou Pollution?

This project was designed to determine the levels of particulate and ozone pollution in the Durango, CO area. By measuring the pollution levels at several different locations, an additional objective was to find the locations with the highest levels and use that information to determine possible pollution sources. Five diverse locations were chosen for testing: (1) downtown Durango with the highest vehicle traffic, (2) a residential area of Durango, (3,4) similar rural locations 2 miles north and south of Durango, and (5) a ski area 30 miles north of Durango. On four fair weather days, particulate levels were tested for 8 hours using a card coated with petroleum jelly to trap particles and ozone levels were tested by observing the color change of Schoenbein paper for one hour at each location. Averaged over four trials, the highest ozone and particulate levels were at the downtown location. The second highest levels were at the rural location south of Durango. Third highest ozone and particulate levels were measured in the residential neighborhood. The fourth highest average levels were measured at the rural location north of town. The lowest particulate and ozone pollution levels were measured 30 miles north of Durango. Analysis of the data indicated that the rural area south of town had almost as much pollution as downtown when one would expect comparable levels to the similar rural location north of town. Prevailing winds were from the SSW on all trial days, suggesting the higher pollution levels at the rural location were not from Durango, but were coming from thousands of gas wells and several power plants located south of that location.